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CLAIMS:

1.   Receiver (1) for receiving frequency signals, which receiver (1) comprises
    -    a processing stage (10) for converting the frequency signals into baseband signals
         comprising preamble symbols (SP,LP) and data symbols (D1,D2) and for processing
         the baseband signals; and
5   -   a synchronisation stage (20) for synchronising the processing stage (10) and
         comprising a first part (23) for performing a coarse time synchronisation through
         autocorrelating samples of a group of preamble symbols (t1,t2,t3) and comprising a
         second part (24) for performing a fine time synchronisation through crosscorrelating
         samples of a further group of preamble symbols (t10,G1) with predefined samples.
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2.   Receiver (1) according to claim 1, wherein the synchronisation stage (20)
comprises a third part (25) for performing a coarse frequency synchronisation through
detecting and accumulating phases of samples of a yet further group of preamble symbols
(t8,t9).
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3.   Receiver (1) according to claim 2, wherein the yet further group of preamble
symbols (t8,t9) is situated between the group of preamble symbols (t1,t2,t3) and the further
group of preamble symbols (t10,G1).

20 4.   Receiver (1) according to claim 3, wherein the third part (25) is adapted to
perform a fine frequency synchronisation through detecting and accumulating phases of
samples of another group of preamble symbols (T1,T2) following the further group of
preamble symbols (t10,G1).

25 5.   Receiver (1) according to claim 2, wherein the processing stage (10)
comprises a fourth part for performing an automatic gain control after the coarse time
synchronisation and before the coarse frequency synchronisation.

6.   Receiver (1) according to claim 1, wherein the processing stage (10)
comprises

- a mixing unit (11) for converting the frequency signals into the baseband signals; and
- a transformating unit (12) coupled to an output of the mixing unit (11) for processing

5   the baseband signals;
                    with the synchronisation stage (20) comprising

- a buffering unit (21) coupled to the output of the mixing unit (11) for buffering at
  least a part of the baseband signals; and
- a controlling unit (22) coupled to control inputs of the mixing unit (11) and the

10   transformating unit (12) for controlling the mixing unit (11) and the transformating
           unit (12);
                    with inputs of the first part (23) and the second part (24) being coupled to an
output of the buffering unit (22) and with an output of the first part (23) being coupled to·a
first input of the controlling unit (22) and with an output of the second part (24) being

15   coupled to a second input of the controlling unit (22).

7.   Receiver (1) according to claim 6, wherein the first part (23) comprises an
autocorrelating unit (31) coupled to the input of the first part (23), an integrating unit (32)
coupled to an output of the autocorrelating unit (31), a first delaying unit (33) coupled to an

20   output of the integrating unit (32), a scaling unit (34) coupled to an output of the first
delaying unit (33), a deciding unit (35) coupled to outputs of the scaling unit (34) and the
integrating unit (32), a second delaying unit (36) coupled to an output of the deciding unit
(35), and logical units (37,38) situated between an output of the second delaying unit (36)
and the output of the first part (23).

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8.   Receiver (1) according to claim 7, wherein a third part (25) for performing a
coarse frequency synchronisation and for performing a fine frequency synchronisation
comprises a phase detecting unit (51) coupled to the output of the autocorrelating unit (31)
and a phase accumulating unit (52) coupled to an output of the phase detecting unit (51), with

30   an output of the phase accumulating unit (52) being coupled to a third input of the controlling
unit (22).

9.   Receiver (1) according to claim 6, wherein the second part (24) comprises a
crosscorrelating unit (41) coupled to the input of the second part (24), an absolute value unit

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(44) coupled to an output of the crosscorrelating unit (41), an integrating unit (42) coupled to the input of the second part (24), a scaling unit (43) coupled to an output of the integrating unit (42), a deciding unit (45) coupled to outputs of the absolute value unit (44) and the scaling unit (43), with an output of the deciding unit (45) being coupled to the output of the second part (24).

10.   System (60) comprising a processor (61) and a receiver (1) for receiving frequency signals, which receiver (1) comprises
-    a processing stage (10) for converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and for processing the baseband signals; and
-    a synchronisation stage (20) for synchronising the processing stage (10) and comprising a first part (23) for performing a coarse time synchronisation through autocorrelating samples of a group of preamble symbols (t1,t2,t3) and comprising a second part (24) for performing a fine time synchronisation through crosscorrelating samples of a further group of preamble symbols (t10,G1) with predefined samples.

11.   Synchronisation stage (20) for use in a receiver (1) for receiving frequency signals, which receiver (1) comprises
-    a processing stage (10) for converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and for processing the baseband signals; and
-    the synchronisation stage (20) for synchronising the processing stage (10) and comprising a first part (23) for performing a coarse time synchronisation through autocorrelating samples of a group of preamble symbols (t1,t2,t3) and comprising a second part (24) for performing a fine time synchronisation through crosscorrelating samples of a further group of preamble symbols (t10,G1) with predefined samples.

12.   Method for receiving frequency signals, which method comprises the steps of
-    converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and processing the baseband signals; and
-    synchronising the converting and/or the processing via performing a coarse time synchronisation through autocorrelating samples of a group of preamble symbols

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(t1,t2,t3) and via performing a fine time synchronisation through crosscorrelating samples of a further group of preamble symbols (t10,G1) with predefined samples.

13.   Processor program product for receiving frequency signals, which processor program product comprises the functions of

- converting the frequency signals into baseband signals comprising preamble symbols (SP,LP) and data symbols (D1,D2) and processing the baseband signals; and

- synchronising the converting and/or the processing via performing a coarse time synchronisation through autocorrelating samples of a group of preamble symbols (t1,t2,t3) and via performing a fine time synchronisation through crosscorrelating samples of a further group of preamble symbols (t10,G1) with predefined samples.